



Got Fat?

Exploding Nutrition Myths

Harvard Prof. Walter Willett: "The current dietary pyramid is based on: all 'complex' carbohydrates are good, all fats are bad. That view was never supported by any data."

Harvard's *World Health News* conducted this interview with Walter Willett, M.D., Professor of Epidemiology and Nutrition and Chair of the Department of Nutrition

Q: *In what area of nutrition has there been the most disagreement?*

A: Probably the most disagreement has concerned the optimal amount of fat and carbohydrate in the diet. Of course, fat and carbohydrate are opposite sides of the same coin; if you increase one, you decrease the other. For the last two decades the nutrition establishment has made reduction in percentage of calories from fat as the number one nutritional priority. I think that in the last several years, there has been a major shift in that view. There's not yet consensus on this area, but many people have come to realize that the percentage of calories from fat is not so important and may not actually be important at all within a wide range. But it is an area that's still unsettled, and we have popular diets representing extremes, from the super low-fat diets, like the one Dean Ornish promotes, to the Atkins-type diets which are very high in fat and protein and extremely low in carbohydrate.

The relation of fat intake to health is one of the areas that we have examined in detail over the last 20 years in our two large cohort studies: the Nurses' Health Study and the Health Professionals Follow-up Study. We have found virtually no relationship between the percentage of calories from fat and any important health outcome. But what does seem important is the type of fat and the form of carbohydrate.

Unfortunately, these important details have been lost in the campaign to reduce all types of fat. Some of this is not new, because in the late 60s and 70s it was appreciated that the type of fat had an important influence on blood cholesterol levels. The fact that substituting unsaturated fats for saturated fats would reduce blood cholesterol levels provided the basis for the main public health message about diet at that time, and this certainly contributed to the decline in heart disease mortality during that period. But somewhere in the 80s this shifted to a message of "Reduce all types of fat and load up on complex carbohydrates." The current dietary pyramid is based on: all "complex" carbohydrates are good, all fats are bad. That view was never supported by any data and, in fact, was inconsistent with what was known early on, that the type of fat is a critical factor. The data from our studies and many other studies have supported a critical role of specific types of fat.

Q: *What factors contributed to this shift in advice?*

A: There are a number of reasons. I know well-intentioned nutritionists who thought paternalistically, "Oh the public just can't understand the complexities about different types of fat. Let's just say all fats are bad." But then they kept repeating that fat is bad until they forgot that it wasn't really true. It became dogma, which is hard to break. "Low-fat" also was politically convenient because almost every food industry could buy into the low-fat idea. The dairy industry had low-fat products; the beef industry came up with low-fat beef. And there was a lot of money to be made out of low-fat. In

general, low-fat products are cheaper to produce because sugar is often substituted for fat, and sugar is cheaper. So, after initially resisting the idea, many food industries laughed all the way to the bank because you can get people to pay the same price--or often even a higher price--for a low-fat product that's actually cheaper to produce.

Q: Have low-fat products helped people lose weight?

A: Unfortunately, it seems not. There was a strong belief--and still is--among some members of the nutrition community that if you just lower the percentage of calories from fat, then people will, in some magical way, become lean. But it just hasn't happened. In fact, the opposite has happened, probably in part because people were told that they could eat all the carbohydrate they wanted to and it wouldn't turn to fat. So, you had people loading up on Snack-Well Cookies and it obviously didn't make them skinny.

Q: What about the relationship between fat intake and the risk of breast cancer?

A: In our most recent 14-year follow-up of the Nurses' Health Study, we did not find that low-fat diets protected against breast cancer. If anything, the trend was slightly in the opposite direction. The theory that low-fat diets could possibly increase one's risk for breast cancer is plausible because we know from carefully-controlled metabolic studies that when a middle-aged person who is of average weight and sedentary goes on a low-fat diet, they will have a bad metabolic response: their blood sugar and insulin levels rise, while their blood triglyceride levels go up and their HDL cholesterol--the "good" cholesterol--goes down. That is the syndrome of insulin resistance, and there is some evidence that high insulin levels might have adverse effects for cancer as well as heart disease risk. This is an area that's not yet settled, but it's a lively research topic at the moment.

Q: In light of this evidence, what should people do?

A: The bottom line is that people should be making choices about fat in their diet as it relates to heart disease risk, because that's very clear and well established. Again, it's not total fat that's important, but the type of fat. Until recently, the emphasis has been on replacing saturated fat with carbohydrate. But now it's clear that such a change will have little, if any, benefit for heart disease risk. To reduce risk, you need to replace saturated fat (found mainly in animal products, such as meat, butter, and whole milk) primarily with unsaturated fats--polyunsaturated and monounsaturated. Safflower, sunflower, corn, and soybean oils are high in polyunsaturated fats; canola and olive oils are good sources of monounsaturated fats. This will substantially reduce the risk of heart disease.

What has also become apparent is that *trans* fat is a key part of the picture that has been ignored until recently. Gram for gram, *trans* fatty acids are actually much worse than saturated fat because they have about the same adverse effects on LDL cholesterol, but, unlike any other type of fat, *trans* fat reduces HDL cholesterol and increases triglycerides and another undesirable blood fat, lipoprotein(a). That all adds up to a potent adverse effect on heart disease risk.

Unfortunately, *trans* fats are a prominent part of the U.S. diet. If you look at grocery shelves, almost everything in a package contains partially hydrogenated vegetable fat--meaning *trans* fats. It is inexcusable that we're feeding *trans* fats to the U.S. population without their informed consent. On the bright side, views have swung heavily over the last year or so and the FDA has recently proposed including *trans* fats on the food label, which would be an extremely positive step.

The American Institute for Baking has come to realize that it's inevitable that the *trans* fat content of foods will appear on labels, so they're working on making *trans*-free baked goods. But European food

industries are way ahead of the American food industry in this regard. Virtually all of the margarines in Europe now are *trans* fatty acid-free. Some of these European brands are available in the U.S., and there are several margarines made in the U.S., like Heart Smart and Promise margarines that are *trans* fatty acid-free as well. At the moment, it takes a highly sophisticated consumer to pick out the *trans* fatty acid-free products. But it shouldn't have to be that way, as it is certainly possible to have a food supply without trans fatty acids.

Q: What about different types of carbohydrates?

A: Until recently, it has been believed that carbohydrates should be thought of as sugars and complex carbohydrates: the sugars are bad and the complex carbohydrates are good. But that now seems far too simplistic because many complex carbohydrates, like potatoes and white bread, are converted rapidly to glucose (a sugar) once we eat them. In fact, it's likely that these foods are even worse than sugar, since they actually result in a more rapid rise in glucose than sugar itself does.

Unfortunately, people have been told to load up on complex carbohydrates. The typical American who drives to work, sits in an office all day, and watches television at night will have some degree of insulin resistance, and in this setting a high intake of highly refined carbohydrates can result in serious health problems, such as diabetes and heart disease.

Some complex carbohydrates can be beneficial if they're really whole grains containing high-fiber, intact grains. Once we remove the germ and bran from kernels of grain and smash them into fine powder, like we do to make Wonder Bread, they can be rapidly absorbed and cause a sharp rise in glucose and insulin levels. Keeping the kernels of grain more intact slows down their absorption and delays the release of glucose--it's like having a sustained release capsule of carbohydrate. Our studies have shown that this can have a major role in helping reduce the risk of diabetes and heart disease.

Q: In summary, what can people do to reduce their risk for chronic diseases?

A: On top of the list is to stay lean and active. Our inactivity and weight probably contribute greatly to the differences in cancer rates we see between the U.S. and Japan.

Another priority is to eat healthy fats instead of unhealthy fats. Consuming mostly vegetable oils and minimizing butter, partially hydrogenated fats high in trans fatty acids, and fat from red meat, has major benefits for heart disease risk.

Eating grains in whole grain form, and putting potatoes on an "occasional" list is another priority for health promotion. We don't have to avoid potatoes entirely, but eating them on a daily basis appears to be risky unless we are very active and lean. Most people are probably not even familiar with whole grains, have never had good whole grain pasta, and haven't tried brown rice or barley. Often people haven't had the opportunity to explore these options. One of the things we want to encourage is choice. When going to a restaurant, for example, people should be offered the option of brown rice or whole grain breads and pasta.

Another important factor for helping to prevent cardiovascular disease and some cancers is to eat plenty of fruits and vegetables, including green leafy vegetables. Tomato sauce, rich in lycopene, should be included as well. And again, we should avoid consuming large amounts of red meat, and instead turn to chicken, fish, nuts, and legumes for protein.